UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,747	09/27/2000	Wei Jen Yeh	7000-028	6518

27820 7590 07/23/2004

WITHROW & TERRANOVA, P.L.L.C.
P.O. BOX 1287
CARY, NC 27512

EXAMINER	
NGUYEN, ALAN V	

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 07/23/2004 5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/670,747	Applicant(s) YEH ET AL.	
	Examiner Alan Nguyen	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22,25-41 and 44-54* is/are rejected.

7)☒ Claim(s) *23,24,42 and 43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 12 May 2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the reference.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6, 7, 9, 12, 14-21, 25-28, 30, 31, 33, 36-41, 44-47, 49, 50, and 52 are rejected under 35 U.S.C. 102(e) as being anticipated by Miriyala (US 6,618,377).

Regarding **claims 1, 18, 25, 38, and 44**, Miriyala discloses a telephony node, method **(figure 3, element "Group 1"; column 4, lines 56-66 discloses a ATM network system for handling IP packets)**, and a computer readable medium **("a typical computer system that may be used to run a server software", column 14, lines 21-24)** comprising a first module **(elements 306)** for operating in conjunction with a redundant module **(element 308)** to form a node in a telephony system, the module comprising:

a network interface **("Group 1", figure 3, elements 306, 308, and 310)**; and

a control system **("ATMARP server", element 302)** associated with the network interface **(column 7, lines 20-29 discloses that the server 302 is responsible for implementing ARP protocol together with the groups, which are responsible for routing traffic to and from an external network)** and adapted to:

operate in an active mode when the redundant module is inactive and in a inactive mode when the redundant module is active **(column 7, lines 54-59 discloses in the event that the highest priority client [active] cannot function properly or is unavailable to service the IP address, the next highest priority client [inactive] will service the same IP address)**;

communicate via the network interface using a first IP address when operating in the active mode **(column 7, lines 52-54 discloses the primary client is responsible for servicing the IP address for the group)**;

communicate via the network interface using a second IP address when operating in the inactive mode **(column 8, lines 9-12 discloses the standby client [inactive] may possess other IP addresses that it uses in other roles. Column 9, lines 16-20 discloses the devices may be configured with standby IP addresses; Referring to column 8 lines 4-20, Miriyala discloses the ARP client possesses other IP addresses. As an example, column 10 lines 36-49 discloses where an ARP client must have multiple addresses in order to carry out other dedicated functions. A standby IP address is used, meaning the use of a second IP address during the inactive state)**, wherein the module represents the node when active using the first IP address **(column 7, lines 54-59 discloses in the event that the highest**

priority client [active] cannot function properly or is unavailable to service the IP address, the next highest priority client [inactive] will service the same IP address).

Regarding **claims 2, 26, and 45,** with the features of parent claims 1, 25, and 44 addressed above, Miriyala discloses where the control system is further adapted to communicate via the network interface using a unit IP address for communications based on the module regardless of being active or inactive **(column 7, lines 54-59 discloses in the event that the highest priority client [active] cannot function properly or is unavailable to service the IP address, the next highest priority client [inactive] will service the same IP address).**

Regarding **claims 3, 4, 20, 27, 28, 40, 46, and 47** with the features of parent claims 1, 18, 25, 38, and 44 addressed above, Miriyala discloses where the control system is adapted to provide information by broadcasting a packet to the at least one device upon switching from the inactive mode to the active mode providing the information to associate the first IP address with the first hardware address **(column 3, lines 10-14 discloses that implementation of ARP requires a broadcast medium on which to transmit an ARP request. Figure 1B, and column 3, lines 55-62 further discloses that upon receiving an ARP request from device 104, the server 102 determines that the destination IP address corresponds to the unique hardware address [NSAP address] of device 108 ("active device") and sends to device 104 that hardware address).**

Regarding **claims 6, 7, 21, 30, 31, 41, 49, and 50** with the features of parent claims 1, 18, 25, 38, and 44 addressed above, Miriyala discloses where the redundant module is associated with a second hardware address and the control system is further adapted to provide information by broadcasting to at least one device on the network to associate the second IP address with the second hardware address of the redundant module when operating in the active mode **(column 3, lines 10-14 discloses that implementation of ARP requires a broadcast medium on which to transmit an ARP request. Column 8, lines 6-12, discloses that the standby device 306 has other IP addresses that it uses in other roles. It is entirely possible that device 306 may be responsible for routing traffic simultaneously over multiple IP addresses. Therefore, if device 306 is capable of routing traffic, its unique hardware address must be sent to other devices so they can transmit packets to device 306)**.

Regarding **claims 9, 33, and 52,** with the features of parent claim 7, 31, and 50 addressed above, Miriyala discloses where the control system is further adapted to determine when the redundant module is operational and periodically provide the information to associate the second IP address with the second hardware address to the at least one device until the control system determines the redundant module is operational **(column 8, lines 6-12, discloses that the standby device 306 has other IP addresses that it uses in other roles. It is entirely possible that device 306 may be responsible for routing traffic simultaneously over multiple IP addresses. Therefore, if device 306 is capable of routing traffic, its hardware address must be**

sent to other devices so they can transmit packets to device 306. This process is continued until the standby device 306 becomes a primary device, where it will then associate itself with the shared IP address (first IP address) as disclosed on column 7, lines 54-58).

Regarding **claim 12,** with the features of parent claim 1 addressed above, Miriyala discloses where comprising a computation interface to communicate with a computation module associated with the call processing system, the control system further adapted to communicate with the computation module via the computation interface to allow the computation module to communicate over the network via the module **(column 11, lines 6-11, discloses an interface 512 may be represented by an IP address of 76.32.1.9 and may be responsible for video and voice transmission. Column 8, lines 57-66, discloses the server 302 includes a central processing unit CPU 314, memory 319, and one or more ATM interfaces. When acting under the control of appropriate software or firmware, the CPU 314 is responsible for such router tasks as routing table computations and network management. It may also be responsible for issuing ARP Client communications, applying configuration data).**

Regarding **claims 14, 15, 36, and 37** with the features of parent claim 1 and 25 addressed above, Miriyala discloses where the module is associated with a first hardware address and the control system is further adapted to provide information by broadcasting an ARP request to at least one device on the network to associate the first IP address with the first hardware address prior to sending a message over the network

(figure 6A and column 11, lines 22-27 discloses that the ATMARP server 302 maintains a table that contains entries which associates an IP address component and a hardware component to each device. Column 11, lines 54-59, discloses the failure of a device, and the server 302 adjusts the table to reflect the address change. Since this embodiment utilizes address resolution protocol, the server 302 must have a way to broadcast an ARP request to update the data).

Regarding **claim 16,** with the features of parent claim 1 addressed above, Miriyala discloses where comprising a telephony interface for handling circuit-switched traffic and a computation module interface for communication with a computation module to form a peripheral module for a digital switch, the telephony module and computation module cooperating to provide call processing **(column 11, lines 6-11, discloses a sub interface 510 may have a specific IP address and may be responsible for LAN emulation on an ATM network. A third interface 512 may be represented by another IP address and may be responsible for video and voice transmission)**.

Regarding **claim 17,** with the features of parent claim 1 addressed above, Miriyala discloses where the control system is further adapted to control a media gateway as part of a media gateway controller **(figure 2 and column 4, lines 6-11 discloses the ATMARP Client 104 may be a gateway router leading to the Internet 206, which includes an entity 206 connected to the Internet 206. The ATMARP Client 108 connects with the local network 210, which includes various network nodes such as an arbitrary entity 212)**.

Regarding **claim 19 and 39,** with the features of parent claim 18 and 38 addressed above, Miriyala discloses where the control system for the first module is further adapted to communicate via the network interface using a first unit IP address for communications based on the first module regardless of being active or inactive **(column 7, lines 54-59 discloses in the event that the highest priority client [active] cannot function properly or is unavailable to service the IP address, the next highest priority client [inactive] will service the same IP address)** and the control system for the second module is further adapted to communicate via the network interface using a second unit IP address for communications based on the second module regardless of being active or inactive **(column 8, lines 9-12 discloses the standby client [inactive] may possess other IP addresses that it uses in other roles. Column 9, lines 16-20 discloses the devices may be configured with standby IP addresses)**

.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 5, 8, 29, 32, 48, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miriyala in view of Bender (US 6,366,561).

Regarding **claims 5, 8, 29, 32, 48, and 51** with the features of parent claims 4, 25, and 44 addressed above, Miriyala discloses the use of broadcasting an ARP request over the network intended to be received by the at least one device upon switching from the inactive mode to the active mode to provide the information to associate the first IP address with the first hardware address **(column 3, lines 10-14 discloses that implementation of ARP requires a broadcast medium on which to transmit an ARP request. Figure 1B, and column 3, lines 55-62 further discloses that upon receiving an ARP request from device 104, the server 102 determines that the destination IP address corresponds to the hardware address [NSAP address] of device 108 ("active device") and sends to device 104 that hardware address)**.

Miriyala fails to expressly disclose the step of the control system being further adapted to broadcast a gratuitous ARP request over the network.

Bender, however, discloses an IP network using redundancy of nodes that has a control system **("modem pool controller, MPC", column 6, lines 28-32)** that broadcast a gratuitous ARP request over the network **(column 13, lines 23-28 discloses the uses of gratuitous ARP is known by those skilled in the art of networking. MPC 320B sends a gratuitous ARP message to all other members of its subnet, informing those entities that all packets with a specific destination address should be sent to the ethernet hardware address of MPC 320B)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Miriyala's apparatus to have the feature of broadcast a

gratuitous ARP request over the network, as taught by Bender. The motivation is the use of the gratuitous ARP can decrease the amount of time it takes for packets from one node to be routed to the next, as disclosed by Bender on column 13, lines 28-32.

6. Claims 10, 11, 22, 34, 35, 53, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miriyala in view of Lelaure et al (US 6,640,314) hereinafter Lelaure.

Regarding **claim 10, 11, 22, 34, 35, 53, and 54** with the features of parent claims 1, 18, 25, and 44 addressed above, Miriyala discloses where the module is associated with a first hardware address and the redundant module is associated with a second hardware address **(column 8, lines 21-26 discloses that is the responsibility of the ATMARP Server 302 to use the relevant lower level address system for unique identification. ARP Clients 310, 308 and 306 may have NSAP address [hardware address] designations of NSAP-1, NSAP-2 and NSAP-3, respectively).**

Miriyala fails to expressly disclose the control system is further adapted to provide information to at least one device on the network to associate the first IP address with the second hardware address upon receipt of a message having the first IP address and the first hardware address when operating in the inactive mode, and further failing to associate the second IP address with the second hardware address upon receipt of a message having the second IP address and the first hardware address when operating in the active mode.

Lelaure, however, discloses a redundant automation system using IP addressing that switches the IP addresses of the active device and the inactive device while retaining the hardware addresses during a failure of the primary device. Lelaure discloses the control system is further adapted to provide information to at least one device on the network to associate the first IP address with the second hardware address upon receipt of a message having the first IP address and the first hardware address when operating in the inactive mode **(figure 2 and column 3, lines 17-32 discloses the PLC A that is in the normal state has a hardware address @MAC1 and an IP address denoted @IPn. PLC B, which is in the standby state has a hardware address @MAC2 and an IP address denoted @IPs. After switching, the coupler CC2-B on PLC B for which the hardware address is @MAC2 takes on the IP address @IPn by changing to the normal state. The IP address of coupler CC2-A of PLC A for which the hardware address is @MAC1 then becomes @IPs, provided that it can do so depending on the failure)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Miriyala's apparatus to have the feature of switching the IP addresses of the active device and the inactive device while retaining the hardware addresses during a failure of the active device, as taught by Lelaure. The motivation is that when switching takes place between two devices within the redundant system following an operating problem, it occurs very quickly and therefore loss of communication with third party equipment is minimized, or is even imperceptible, as disclosed by Lelaure on column 1, lines 35-40.

7. Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Miriyala in view of Onweller (US 5,907,610).

Regarding **claim 13** with the features of parent claims 12 addressed above, Miriyala discloses the use of a computational interface for the computational module **(column 11, lines 6-11, discloses an interface 512 may be represented by a specific IP address and may be responsible for video and voice transmission. Column 8, lines 57-66, discloses the server 302 includes a central processing unit CPU 314, memory 319, and one or more ATM interfaces. When acting under the control of appropriate software or firmware, the CPU 314 is responsible for such router tasks as routing table computations and network management. It may also be responsible for issuing ARP Client communications, applying configuration data)**.

Miriyala fails to expressly where the control system is further adapted to establish a remote socket interface with the computation module via the computation interface.

Onweller, however, discloses a telephony communications networking system that utilizes a remote socket interface **(column 13, lines 15-20 discloses a process interface that provides a socket through which the communications traverse, and the socket is a gateway between "INTERFACE" and the LAN 196 or router 204 of figure 3A)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Miriyala's apparatus to have the feature a remote socket

interface to other networks, as taught by Onweller. The motivation is a more portable and accessible system with the ability to provide direct access to other networks, as disclosed by Onweller on column 13, lines 10-15.

Response to Arguments

8. Applicant's answers (12 May 2004) regarding claims 1, 18, 25, 38, and 44 rejected under 35 USC 102 have been fully considered but are not persuasive. Regarding independent **claims 1, 18, 25, 38, and 44,** Applicant argues that the Miriyala reference (US 6,618,377) fails to disclose that first module and redundant module are not clearly identified, and where the network interface uses a second IP address when it is in the inactive mode. The Examiner respectfully disagrees. The prior art of Miriyala still reads on the limitations of clams 1, 18, 25, 38, and 44. For example, refer to figure 3 of Miriyala. The disclosure from column 7 lines 16-67 and column 8 lines 1-27 explains the functions of figure 3. Group 1 and Group 2 are interpreted as the network interfaces and ARP server 302 is the control system associated with the two network interfaces. Although the explanation of the Miriyala reference and claims differ in language, they both provide the same function. For example Miriyala designates the devices as either active or standby. Each network interface communicates with control system 302. Control system 302 associates with each ARP client in the network interface. This shows each ARP client has some sort of control system. Applicant states that the first module and redundant module are not clearly identified. The modules are referred to by Miriyala as ARP clients. Specifically, in figure 3, ARP client 310 is the active module and

ARP client 306 is the redundant module. When 310 is switching, the control system 302 sees it as the active device (active mode) and sees ARP client 306 as the standby device (inactive). Being the active device implicitly means that it is in the active state, and being the standby device means that it is in the inactive state. Applicant states that Miriyala fails to show where the network interface using a second IP address when it is in the inactive mode. Referring to column 8 lines 4-20, Miriyala discloses the ARP client possesses other IP addresses. As an example, column 10 lines 36-49 discloses where an ARP client must have multiple addresses in order to carry out other dedicated functions. A standby IP address is used, meaning the use of a second IP address during the inactive state.

Regarding **claims 2, 26, and 45** Applicant states the reference fails to show where the control system communicates with the network interface using an additional unit IP address. Referring to column 8 lines 1-27 Miriyala discloses where the control system 302 further uses an NSAP address to communicate with each ARP client. This address is considered as the unit address.

Regarding **claims 3, 4, 20, 27, 28, 40, 46, and 47** Applicant states the reference fails show the use of associating the first IP address with a hardware address. Referring to column 3, lines 55-62 discloses that upon receiving an ARP request from a device 1, the server determines that the destination IP address corresponds to the unique hardware address [NSAP address] of "active" device 2 and sends to device 1 that

hardware address. This is a function in an ATMARP system. Column 4 lines 55-66 discloses the Miriyala embodiment is implemented in an ATMARP system.

Regarding **claims 5, 8, 29, 32, 48, and 51** Applicant states the Miriyala reference in combination with the Bender reference fails to show a teaching where it is obvious for the control system to broadcast a gratuitous ARP request over the network to associate a first IP address with a first hardware address. The embodiment of Miriyala cites an objective to have a system with both data integrity through the use of redundancy and efficiency by expediting packets in a quick manner. See column 1 lines 24-34 and column 16 lines 23-27. Utilizing gratuitous ARP would decrease the amount of time it takes for packets from one node to be routed to the next as taught by Bender on column 13 lines 28-32.

Regarding **claims 10, 11, 22, 34, 35, 53 and 54** Applicant states the Miriyala reference in combination with the Lelaure reference fails to show a teaching where it is obvious for the control system to associate the first IP address with the second hardware address when the second module become active. The embodiment of Miriyala cites an objective to have a system with both data integrity through the use of redundancy and efficiency by expediting packets in a quick manner. See column 4 lines 54-65 and column 16 lines 23-27. Utilizing the switching of IP addresses to the hardware addresses of the modules would prevent loss of communication during a failure as taught by Bender on column 11 lines 32-45 and col 3 lines 55-67.

Regarding **claim 13** Applicant states the Miriyala reference in combination with the Onweller reference fails to show a teaching where it is obvious for the control system to establish a remote socket interface for communication to the computation module. The embodiment of Miriyala cites an objective to have a system with both data integrity through the use of redundancy and efficiency by expediting packets in a quick manner. See column 1 lines 24-34 and column 16 lines 23-27. Utilizing a remote socket interface for communication with the computation module would make a more efficient system since it is desirable to send and receive communications using an address assigned to the process interface as taught by Onweller on col 13 lines 1-20. It is concluded that the Maggenti reference taken in it entirety continues to anticipate claims 1-4, 6, 7, 9, 12, 14-21, 25-28, 30, 31, 33, 36-41, 45-47, 49, 50, and 52 and in combination with the other references continue to read on the claimed subject matter through obviousness. Therefore the claims are not allowed over the prior art.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Nguyen whose telephone number is 703-305-0369. The examiner can normally be reached on 9am-6pm ET, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AVN
July 20, 2004

JOHN PEZZLO
PRIMARY EXAMINER